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NEW SOUTHERN FORMS OF CARYCHIUM AND THYSANOPHORA.

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CARYCHIUM EXIGUUM FLORIDANUM new subspecies. Pl. 8, fig. 4-6.

Differs from the type by its constantly smaller size and the *greatly thickened lip*. The shell is also more tapering, making the last whorl appear swollen.

Of 25 shells measured, from 5 different localities, the largest is 1.73×0.81 mm. and the smallest 1.52×0.78 mm., the average being 1.64×0.78 mm.

Fig. 5, "Snapper Creek Hammock" about 8 miles south of Miami, Fla., measures 1.64×0.72 mm. Length of aperture 0.63, width 0.58 mm. Average of 6 shells, 1.61×0.70 mm.

Fig. 4, near Coot Bay, Cape Sable, measures 1.73×0.78 mm. Length of aperture 0.69, width 0.63 mm. Average of 6 shells 1.67×0.78 mm.

Fig. 6, Miami, collected by S. N. Rhoads, measures 1.78×0.86 mm. South side of Miami River, about 2 miles above Miami, average of 6 shells 1.61×0.77 mm.

Musa Isle, edge of Everglades at entrance to Miami River, average of 6 shells 1.58×0.79 mm. The Musa Isle shells are more globose than those from the other localities, the diameter being exactly one-half of the length.

This subspecies is of wide distribution in Florida and I first noticed it in 1895 when I collected a single specimen at Homosassa, Citrus Co. So far as I have seen it is the only form found in the Miami and Cape Sable regions.

Carychium is apparently not present on the Florida Keys as

I have examined "rubbish" from over 20 of them from Key Biscayne to Garden Key, Dry Tortugas; and while I found over 60 species of land shells, there was not even a fragment of *Carychium*, and it is not mentioned in any of Pilsbry's published lists of Key shells.

Types from Snapper Creek Hammock, No. 8569 of my collection.

THYSANOPHORA MACNEILLI n. sp. Pl. 8, fig. 1.

Shell small, globose, with about four well-rounded whorls, suture deep; color chestnut-brown, somewhat shining; surface with faint growth lines and microscopically granulated; apex obtuse, large, more densely granulated than the body of the shell; widely umbilicate with the umbilicus extending to the apex and contained about 5 times in the diameter of the shell. Aperture well rounded slightly oblique, lip thin, partly reflected around the umbilicus.

The type measures alt. 1.50, diam. 1.38, umbilicus 0.29 mm.

Types, fig. 1, from Magazine Point, 8 miles north of Mobile, Ala., No. 8572 of my collection. Also found at Spring Hill and along the Fowl River about 3 miles from the coast in the southern part of Mobile Co.

This species is named after the late L. H. McNeill of Mobile, Ala., who first found it in 1914. Mr. McNeill, although handicapped by poor health, was an enthusiastic collector and added much to our knowledge of the molluscan fauna of southern Alabama.

There are two species found in Florida, and probably others of the Gulf states, with which this species may be confused. From *T. dioscoricola* (C. B. Ad.) it differs in the wider umbilicus, less oblique aperture and in having about $\frac{1}{2}$ whorl more in the same diameter.

T. caeca (Guppy) is a larger, more depressed shell, subangular at the periphery, umbilicus nearly covered, and surface with *distinct spiral sculpture*.

EXPLANATION OF PLATE 8.

Fig. 1, *T. macneilli* Clapp $\times 16.6$, alt. 1.50, diam. 1.38 mm.

Fig. 2, *T. dioscoricola* (C. B. Ad.) \times 16.6, alt. 1.38, diam. 1.27 mm.

Fig. 3, *T. caeca* (Guppy) \times 16.6, alt. 1.67, diam. 1.73 mm.

Fig. 4, *C. e. floridanum* Clapp \times 21, alt. 1.73, diam. 0.78 mm.

Fig. 5, *C. e. floridanum* Clapp \times 21, alt. 1.64, diam. 0.72 mm.

Fig. 6, *C. e. floridanum* Clapp \times 20, alt. 1.73, diam. 0.66 mm.

THE ANATOMY OF TWO AFRICAN NAYADES, *UNIO CAFFER* AND
SPATHA WAHLBERGI.

BY A. E. ORTMANN.

UNIO CAFFER Krauss, Sued Afr. Moll. 1848.

Nodularia caffer Simpson, Synopsis, 1900, p. 825.

Unio caffer Simpson, Descript. Catal. 1914, p. 574.

When Simpson placed this species in *Nodularia*, the anatomy of only two species of this genus was known, and these had the inner gills marsupial. We know now, that Simpson's *Nodularia* is altogether a conglomerate of entirely heterogeneous forms. The present species was placed by Simpson (in 1914) in *Unio*, since he had seen gravid specimens. But he does not give any particulars as to the structure of the soft parts, and thus it is desirable to give an account of them.

I am indebted to B. Walker for the soft parts of a number of specimens of this species, collected at two localities; Lindague Spruit, Natal (trib. to Little Tugela River, coll. in July 1913); and Premier Mine Pumping Station, junction of Elands and Wilge River, near Pretoria, Transvaal (coll. April 1914).

The gravid females collected in July had mostly eggs, but one of them had glochidia; of those collected in April only one female was gravid, and also had glochidia. It is hardly possible to draw from these dates a conclusion as to the breeding season, except that it might begin in July, provided that there is at all a definite season.

Anatomy: Anal opening separated from the supraanal opening by a moderate mantle connection, slightly shorter than the anal. Supraanal about as long as or slightly longer than the anal. The latter with the inner edge almost smooth. *Branchial*